

ABSTRACT OF THE DISCLOSURE

Disclosed herein is a cleaning process for a substrate surface on which a high-density film and a low-density film lower in density than the high-density film are carried in combination. According to the cleaning process, a mixed gas of anhydrous hydrogen fluoride gas and a heated inert gas is brought into contact with the substrate surface such that at least a portion of the low-density film is removed without impairing the high-density film beyond a tolerance. The substrate is, for example, a semiconductor substrate.